EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"6430527".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:36
L2	1	"6430527".pn. and (longest with prefix with match)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:43
L3	1	2 and overall	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:38
L4	0	3 and cascaded	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:09
L5	1	3 and (network with packet)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:42
L6	1	5 and (search with engine$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:42
L7	1	3 and network and packet	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:42
L8	1	7 and search and engine$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 16:42
L9	1	7 and longest and prefix and match	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:54

EAST Search History

L10	1	9 and determine	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:08
L11	2	"6631419".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:08
L12	1	11 and cascaded	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:09
L13	1	12 and network	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:09
L14	1	13 and prefix	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:09
L15	1	14 and search	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:10
L16	1	15 and engine$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:10
L17	1	16 and prefix	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:10
L18	1	17 and longest	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:10
L19	1	18 and match	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:10

EAST Search History

L20	1	19 and overall	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:11
L21	2	"20050175010".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 17:55

Title:

Parallel asymmetric binary LPM (longest prefix match) search for IP routing lookups

Document Type and Number:
European Patent EP1544757
Link to this page:
http://www.freepatentsonline.com/EP1544757.html
Abstract:

Abstract of **EP1544757**
Parallel binary searches on lengths using hash tables is described. The parallel search uses more than one search instance. The search instances probe in parallel mutually different contiguous ranges of a search area during each round of searches. After each round, a new search area is defined and one or more search instances are redeployed into the new search area. The search instance for a range of shorter lengths can be redirected to help those of the longer lengths. Due to the help from other search instances, some ranges can be made large without sacrificing the performance. The invention realizes faster address lookups even for longer address lengths.

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Abstract
This article describes the dynamic prefix tries, a novel data structure with algorithms for insertion, deletion, and retrieval to build an a dynamic database of binary keys of arbitrary length. These tries extend the concepts of compact digital (Patricia) tries to support t storage of prefixes and to guarantee retrieval times at most linear in the length of the input key irrespective of the trie size, even wh searching for longest-matching prefixes. The new design permits very efficient, simple and nonrecursive implementations of small and minimal storage requirements. Insert and delete operations have strictly local effects, and their particular sequence is irrelevant structure of the resulting trie, thus maintaining at all times the desired storage and computational efficiency. The algorithms have be successfully employed in experimental communication systems and products for a variety of networking functions such as address maintenance and verification of access control lists, and high-performance routing tables in operating system kernels

Index Terms
Inspec

Controlled Indexing

access protocols computer networks network operating systems operating system kernels telecommunication network routing tree data structures

Non-controlled Indexing

access control lists address resolution binary keys communication systems compact digital tries computational efficiency data structure deletion dynamic database dynamic prefix tries input key insertion longest-matching prefixes maintenance minimal storage networking functions operating system kernels retrieval routing small code size verification

Author Keywords
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↑ INDEX TERMS

Primary Classification:

F. Theory of Computation

↳ **F.2** ANALYSIS OF ALGORITHMS AND PROBLEM COMPLEXITY

↳ **F.2.2** Nonnumerical Algorithms and Problems

↳ **Subjects:** Routing and layout

Additional Classification:

G. Mathematics of Computing

↳ **G.2** DISCRETE MATHEMATICS

General Terms:

Algorithms, Measurement, Performance, Theory, Verification

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